# California State Adaptation Strategy Extreme Heat Workshop Series:

# Built Environment

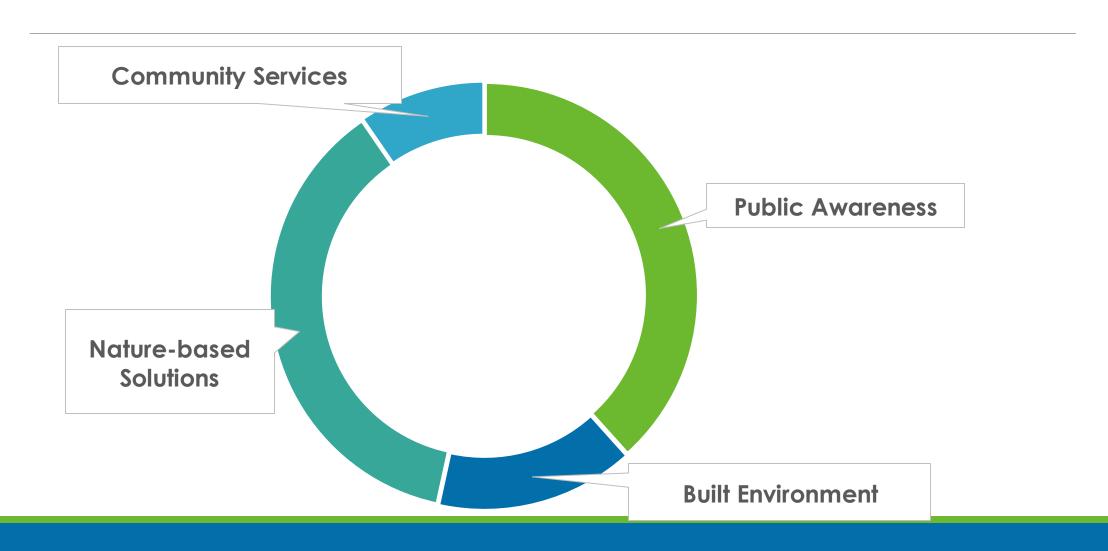
AUGUST 19, 2021



# California's Extreme Heat Framework

### March 2021 Extreme Heat Workshop:

"What are key pillars of a successful state framework for responding and adapting to extreme heat?"





### California's Extreme Heat Framework

Amanda Hansen, Deputy Secretary for Climate Change at the California Natural Resources Agency (CNRA)

Agenda Overview

Juliette Finzi-Hart, ICARP Program Manager at the CA Governor's Office of Planning and Research

Built Environment: Case Study

Kurt Shickman, Executive Diréctor of the Global Cool Cities Alliance (GCCA)

Built Environment Listening Session All Workshop Participants

Next Steps

California's Extreme Heat Framework Amanda Hansen, Deputy Secretary for Climate Change at the California Natural Resources Agency (CNRA)

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### Workshop Instructions



Thank you for joining the workshop!



To minimize background noise, your lines will be muted throughout the discussion.



If you experience any technical difficulties, please enter a question in the Zoom chat and staff will respond to you as soon as possible.

### Live Polling Instructions

- Join us online at **slido.com** for a series of interactive polls!
- You can join via the following link (this will also be provided in the Zoom chat): https://app.sli.do/event/esnbuoip
- Questions alternate between multiple choice and open text.
   Follow the on-screen prompts to submit your answers!
- Presenters will preview the results as submitted; all responses will be captured in the post-workshop summary.

1. What region(s) of California are you representing today?

2. What is your affiliation?

3. How is extreme heat impacting you, your community, or your region?

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Strategies for Cooling Our Communities



**Cool Pavement – Elk Grove** 

**Credit: Carrie Whitlock** 

**Cool Roofs – Florida** 

**Credit: Shutterstock** 



Cool Walls - Berkeley

Street Trees – LA **Credit: Ronnen Levinson** 



### Elements of effective heat resilience strategies



Source: Dr. Paul Osmond, University of New South Wales

# City-wide Baltimore Smart Surface adoption would create:



\$13.5 billion net present value from adoption of Smart Surfaces\*



3,600 jobs in first 20-years, 78,700 job years created over 30 years §



15x more benefits than costs required to implement and maintain this strategy<sup>†</sup>



17 million tonnes carbon reduction impact:

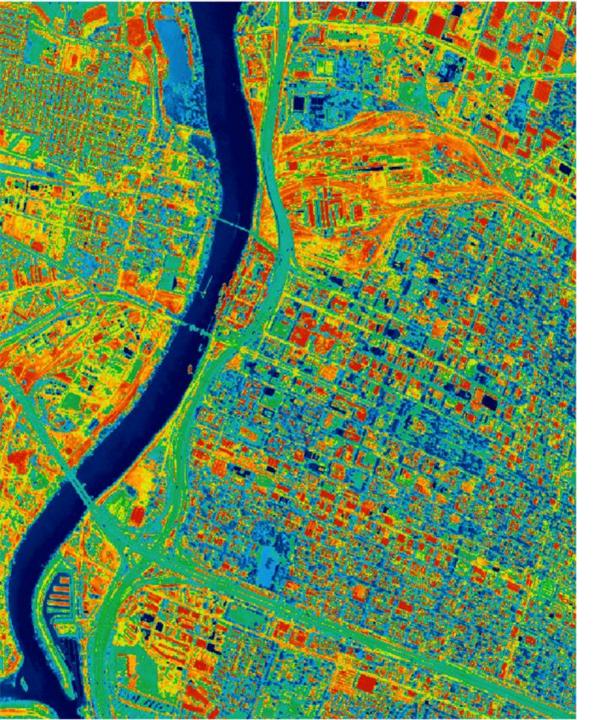
12.4 million tonnes of CO2 avoided + 4.5 million tonnes of CO2 equivalent reduction<sup>‡</sup>



4.3°F peak summer temperature reduction in hottest areas of the city.
With 2.5°F peak summer temperature reduction on average city-wide¶

#### NOTES:

- \* In 2020 dollars, at 2% real discount rate over 30 years, 5% avoided summer tourism loss is a very conservative estimate compared to a business-as-usual warming scenario, many surface impacts are not quantified due to lack of rigorous data and/or research
- † dollar value of total benefits and total costs over 30 years, in 2020 dollars
- ‡ in metric tonnes over 30-ye ars. Avoided CO2 from Solar PV generation, and CO2 equivalent from radiative forcing effect of increasing reflectivity. A 3% annual reduction in gride missions intensity is assumed for business-as-usual baseline/comparison
- § jobs include installation, O&M, and direct materials. One job year equals one full-time job for one year. If avoided job loss from avoiding 5% loss of summer tourism revenue is included total job years created + saved is estimated at over 124,400 job years
- $\P$  a mbient air temperature from reflective surfaces and radiative shading effect from trees, not including eva potranspiration cooling and reduced A/C heat ejection so actual temperature reduction is likely higher



## Thanks!

### Reach out anytime:

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### Built Environment Listening Session All Workshop Participants

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### **Listening Session Directions**

- Our goal is to hear your insight and expertise facilitators will be in "listen mode," but will provide prompts as needed.
- To enter the conversation queue, use the "hand raise" feature under your participant controls or type "next" into the chat.
- Throughout the discussion, you are welcome to provide any additional insight via the chat function.
- Duration: 30 minutes

### **Built Environment Listening Session**

- 1. What would success in achieving heat resiliency in the built environment look like?
- 2. How does the built environment contribute to extreme heat in your community?
- 3. What actions should be taken to bolster the built environment's resilience to extreme heat?
- 4. What obstacles does your community face in taking these actions?
- 5. How can the State support existing regional, local, and community-based initiatives to implement built environment heat risk reduction solutions?
- 6. What research or knowledge-sharing gaps prevent the implementation of techniques that strengthen the built environment's resilience to extreme heat exposure?

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**Next Steps** 

### **Draft Action Tracks**

#### Public Awareness

Ex. Heat awareness and education strategies, emergency alerts and early warning, and data accessibility and heat modeling

### Community Services and Emergency Response

Ex. Cooling centers and resilience hubs, community infrastructure, and support for local and regional extreme heat response plans

#### Built Environment

Ex. Infrastructure, building retrofit, cool roof and pavement technologies, and air conditioning

#### Nature-based Solutions

Ex. Community greening and gardens, urban forestry, and greenbelts

# Are there critical aspects of extreme heat response and adaptation that are not addressed in the action tracks listed?

Public Awareness
Community Services and Emergency Response
Built Environment
Nature-based Solutions

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# Thank you!

### KEEP UP TO DATE:

HTTPS://RESOURCES.CA.GOV/INITIATIVES/BUILDING-CLIMATE-RESILIENCE/2021-STATE-ADAPTATION-STRATEGY-UPDATE

QUESTIONS?

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